SPECIFICATION

TITLE OF INVENTION:

Flexible, adaptable loft city

CROSS-REFERENCE TO RELATED APPLICATIONS:

Not Applicable.

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT:

Not Applicable.

REFERENCE TO SEQUENCE LISTING, A TABLE, OR A COMPUTER PROGRAM LISTING COMPACT DISK APPENDIX:

Not Applicable.

BACKGROUND OF THE INVENTION:

1. This invention relates to architectural structures intended primarily for human occupation and use as residence, place of business and similar day-to-day activities.

2. The invention is intended to solve a central issue in modern urban development: how to combine the advantages of a high-density urban environment with those of a low-density suburban area while reducing or avoiding the difficulties and problems associated with each.

3. The most active, vibrant communities in the world are found in high-density, mixed-use areas. Cities like New York, London, Paris, Tokyo and San Francisco have a high population density, which goes hand-in-hand with the high density of urban amenities of culture, business and entertainment. At the same time, though, such cities suffer from congestion, poor air quality and lack of open spaces.

4. Low-density suburban areas provide residents with those open spaces. Homes with yards situated on cul-de-sacs, undeveloped wooded areas and farm fields, commercial and industrial areas isolated and dispersed, all contribute to a feeling of openness and nature. However, this dispersion of homes, store, businesses and so on prevents the creation of a critical mass of human energy to often to support even a good restaurant, much less the museums, orchestras, institutes, organizations and attractions the make cities so much more vibrant. They also fail to reduce overall transportation

demands, trading suburban distance for urban congestion.

5. The modern American habit of building and maintaining suburbs of innumerable free-standing structures dependent on automotive transit imposes great costs on residents in terms of money, energy and pollution. Great swaths of land are severely under-utilized as parking lots, streets and yards for private residences. Free-standing structures are exposed to the weather on every side, imposing substantial heating and cooling costs.

6. The adverse effects of over-utilization of automobiles in terms of pollution of the air and water, as well as in terms of the economic cost of street and highway construction and maintenance, are broadly understood. The cost imposed on the environment by maintenance of vast areas of green lawns, with fertilizers, pesticides in run-off and at times great volumes of water devoted to keeping lawns green, have been widely explored and are becoming generally understood.

7. In terms of economics and finance, development occurs on an opportunistic basis by individual actors with little direction other than the perceived market for a specific project. Zoning controls provide some direction, but at the cost of exacerbating the dispersal of community real property assets. Once a property is developed, whether in the city or the suburb, its use has been determined and will only rarely be changed until it, and its environs, has decayed so substantially that it needs to be extensively renovated or simply destroyed in order for a new use to begin.

BRIEF SUMMARY OF THE INVENTION:

8. This invention allows all of the places where the activities of ordinary life occur, including homes, businesses, shops, schools, and so on, to be established in a single structure, built in a specific manner to readily allow subsequent redevelopment as needed over the course of time without alteration of the primary structure. In effect, the buildings commonly laid out along numerous streets are instead stacked atop each other, drastically reducing distances between them and significantly increasing the ability to preserve large tracts of open, accessible and usable land, for purposes such as parks, playgrounds, fields and similar grounds.

9. The amount of land that may be preserved for such uses relative to normal development is significant. For example, a community of 5,000 residents in a conventional development would occupy approximately 420 acres, of which buildings, streets and parking lots would cover 117 acres, or 28% of the total area. A loft city structure, built on six levels and occupying the same 420 acres would cover

only 3.2% of the total area, its footprint occupying only 13.4 acres, but supporting twice the population. In a conventional development, most of the 303 acres not covered by building or pavement would be partitioned into small, private yards or lawns; in a loft city, the 406 acres unencumbered by building or pavement would amount to a vast expanse of park land, as well as the family garden plots commonly seen in European cities. The result is a community that, with twice the population density, nonetheless has vastly superior open spaces.

10. Aside from land use, the loft city provides the opportunity, with minimal restrictions, for occupants to develop floor plans tailored to their personal wants or needs, and making use of more than one level, to provide balcony space outside the envelope of the structure, and to build exterior walls and windows, and interior floors and walls to suit themselves. Residents thus have most of the freedom of suburban developers in spite of working within an established structure.

11. Structural floor space in the loft city is constructed to support a multitude of final uses, and thus avoid both predetermination of initial use and obstruction to eventual change in use. This also provides enormous flexibility in the scale allowable for individual occupants. Floor plans need not be finalized in the design of the loft city structure; instead, the loft city structure is specifically intended to support a wide range of scale in subsequent development of floor plans. The useable life of the basic structure may thus extend indefinitely in the future even in a dynamic, changing community.

12. Because the structure is developed in two distinct stages, the financing of a project can be bifurcated between the primary structure and the secondary construction. The builder of the primary structure need not finance or manage the secondary construction, while the number of developers in the secondary aspects of construction may be quite numerous and varied in the scale of their specific projects and in the financing of those projects.

13. The structure also differs from the commonly seen structures by providing for a tremendous amount of balcony space for nearly every unit. This contrasts with shopping malls and office buildings which only rarely have exterior space other than at ground level. It also contrasts with many residential buildings which often provide only minimal balconies with minimal usable space. Such balcony space incidentally eliminates the common presentation of a monolithic façade of brick and glass.

14. Finally, the scale of the structure allows a healthy diversity in the financial resources of its residents. Conventional housing developments are often designed in blocks of relatively consistent cost, producing homogeneous communities. In a loft city, people with greater and lesser financial means can thrive in a common environment to their mutual benefit.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING:

15. Figure 1 presents a cross section of the structure, perpendicular to the longitudinal axis, illustrating the variations possible in mezzanines, stages, exterior walls and walls adjoining corridors. Vertical structure elements have been omitted for clarity, since their placement is not an essential element of this invention. Partitions and other walls interior to tenants space have also been omitted, since flexibility in their placement is an essential element of this invention. Note that stages may be constructed at various heights above the main level, and need not be continuous across any specific tenant space. Whether a specific stage is supported directly by an element of the main structure or by tenant-constructed elements, such as interior load-bearing walls, will depend on acceptable limits of load distribution in the specific application. Numbered examples illustrated here include:

1. Penthouse structure, with open balconies.
2. Common-use or private tenant-owned area open to weather.
3. Full inside mezzanine extended over open balcony.
4. Bridge through corridor space, linking mezzanine levels on opposing sides of that corridor.
5. Full inside mezzanine, lower balcony space incorporated into inside space, partial open upper balcony.
6. Full mezzanine, all space incorporated into inside space.
7. Partial platform, partial mezzanine, balcony space fully incorporated into inside space.
8. Main level with reduced vertical clearance, such as for vehicle parking space.
9. Potential location of common utilities connections.
10. Potential location of common utilities connections.
11. Enclosed upper and lower balconies not incorporated into interior space, partial mezzanine extending into corridor.
12. Partial mezzanine, open lower balcony, open upper partial balcony.
13. Potential locations of common utilities connections.
14. Full inside mezzanine, single-level open balcony.
15. Full inside mezzanine; open lower and full upper balconies.

16. Figure 2 presents a schematic view of variations in the construction of floor space on main levels. 16 indicates potential uncovered balcony space exposed to the weather. 17 indicates floor space reserved for subsequent build-out, generally within a weather-tight envelope, but in certain applications in such a

manner as could allow the surface to be exposes to the weather. 18 indicates space to be finished as a corridor for common access through the length of the structure. 19 indicates a main level with a central corridor, bordered on each side by floor space intended for subsequent build-out, each space in turn bordered by floor space built to support use either open or protected from the weather. 20 illustrates the same overall allocation of space, but illustrates holes in the main floor, 21, in the corridor and in tenant space, such as for light wells or to allow for access to a main level from the space below. 22 also illustrates the same overall allocation of floor space as in 19, but with a continuous longitudinal gap, labeled 23, dividing the corridor into two separate, neighboring spaces. Such a gap, which may be as wide or narrow as structurally permitted in a specific structure, may be desired for esthetic effect, for circulation of air or access to light. 24 indicates a truncated main level, for which the corridor has space only on one side for build-out. 25 indicate a main level for which no tenant space has been reserved for potential use as a balcony.

17. Figure 3 illustrates allowable variations in the longitudinal arrangement of main levels. 26 indicates a main floor that is non-continuous, such as where it is desired to provide greater height in only one section of the overall structure. 27 indicates an allowable interruption in the length of a main floor, providing greater vertical clearance to the main floor below. This may be done to provide an open gallery, for example, or to provide greater vertical space for subsequent build-out. 28 indicates a main level that does not extend as far as the level above it, while 29 indicates a main level that extends beyond the level below. 30 indicates staggered main levels, which each allow free space to the main level below.

18. Figure 4 provides an illustration of variations in the general geometry of a main structure. 31 indicates a wing anchored on the main structure and extending outward from the main structure. 32 indicates a wing extending from the main structure into a central plaza or courtyard area, labeled 33, formed by the main structure, 34. The creation of an internal plaza is optional and not an essential element of this invention. 35 indicates a wing extending from the main structure to another wing. 36 indicates a wing that is curved, rather than straight.

DETAILED DESCRIPTION OF THE INVENTION

19. The flexible, adaptable loft city is created by the erection of a primary structure involving a system of columns supporting continuous platforms, with a vertical separation between platforms sufficient to allow the subsequent insertion of a mezzanine, not an essential component of the primary structure, with sufficient clearance above and below said mezzanine to allow for occupancy and use by human beings; utility connections, such as electric, water, sewage and telecommunications, are placed at

regular intervals along the length of the primary structure sufficient to allow for subdivision of the primary structure into independent units. A central corridor runs longitudinally through the primary structure as the primary method of access to units. The outer perimeter of the primary structure should generally be constructed in a manner to allow exterior use, such as in the manner of a balcony or porch.

20. The primary structure may be constructed in any manner desired, whether by steel frame, concrete, wood, or other materials, as this is not essential to the invention. The primary structure must incorporate such elements as may be necessary, such as flanges, bolts, eyelets, rims, etc., to allow for subsequent insertion of a stage, a mezzanine or a suspended ceiling at any point in time after the primary structure is completed.

21. The secondary build-out of the loft city with floors, ceilings, interior walls and partitions, and exterior walls and facades, other than in common-use areas (such as entries, corridors and stairwells), may be accomplished in any manner acceptable in the specific application. It is an essential element of the invention that the primary structure provide a framework for subsequent build-out and not be structurally dependent on any element of the build-out.

22. The invention incorporates certain elements commonly seen in contemporary architecture. For example, shopping malls commonly feature substantial main corridors linking all tenant-occupied space, and allow walls, partitions, floors and ceilings to be altered by tenants to suit their use. Lofts, of course, have long provided tenants flexibility in build-out within the space they occupy. Large central court yards figure prominently in European urban architecture of prior centuries.

23. Novel elements of the invention include providing tenants with the discretion beyond erection of interior walls and partitions (as in lofts and shopping malls), allowing them instead also the freedom to construct and maintain exterior walls, with windows, to suit their wishes; to erect mezzanines and stages at various elevations to provide multiple floor levels within their space; to provide themselves with heating, ventilation and air conditioning equipment for their own space; to retain and develop substantial outdoor balcony space on a unit-by-unit basis; and to do so anticipating, allowing and encouraging mixed residential, commercial and other uses in a single structure.